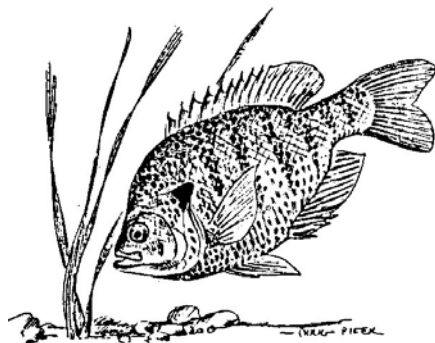


PRIDES CREEK LAKE

2004 Fish Management Report

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INTRODUCTION

Prides Creek Lake is a 90 acre P.L. 566 multipurpose impoundment constructed in 1968. The lake is located one mile south of the Town of Petersburg on State Road 61. The entire lake lies within Prides Creek Park which is a public recreation facility administered by the Pike County Park Board. Half of the lake is bordered by a golf course operated by a not-for-profit group. The park features campgrounds, a swimming beach, and shelter houses. The lake has two boat ramps operated by the park and shore fishing is limited to approximately half the lake. There are no outboard motor restrictions, but an idle speed is enforced. Access fees in 2004 were \$2.00 for a daily boat launching permit, \$2.00 for a daily entrance permit, \$10.00 for an annual boat launching permit, and \$15.00 for an annual entrance permit. An annual entrance permit cost \$4.00 for users providing a Pike County tax receipt.

Past fish management activities have included a pre-impoundment fish eradication, fish management surveys in 1972, 1973, 1974, 1979, 1984, 1993, 1997, and 2001, aquatic vegetation surveys from 1999 through 2003, and a largemouth bass spot check survey in 1986. A 14 inch largemouth bass minimum size limit was established in 1973. Biennial channel catfish stockings of approximately 1,440, 8 to 12 inch fish have occurred since 1970. The last stocking was in 2004. Also, 650 triploid grass carp were stocked in February 1995 and July 1999 to reduce aquatic vegetation.

The 1993 fisheries survey documented that the lake was providing excellent fishing for bluegill, redear sunfish, and channel catfish, but few largemouth bass greater than 14 inches were available. It was determined that excessive aquatic vegetation was limiting the full potential of this fishery. Therefore, it was recommended that triploid grass carp be stocked to reduce the aquatic vegetation.

In 1997, the fishery was similar to what was found in 1993. It was determined that the fish populations did not have a chance to adapt to the reduction in aquatic vegetation. Aquatic vegetation decreased from 66% in 1993 to 4% bottom coverage in 1997.

In 1999, aquatic vegetation covered approximately 64% of the lake bottom. The vegetation was very thick in water less than 12 feet deep which made it nearly impossible for anglers to fish or boat in the lake bays. Therefore it was recommended that an additional triploid grass carp stocking take place that year.

Vegetation abundance in July 2000 decreased to 37% bottom coverage and the maximum depth of the vegetation was 10 feet deep.

The 2001 fisheries survey indicated that the lake had excellent fishing for bluegill, redear sunfish, channel catfish, and largemouth bass. A major concern was the absence of aquatic vegetation. It was determined that too many grass carp were stocked in 1999 due to the lake being drawn down for most of 2001, which artificially reduced the lake's aquatic vegetation. Annual aquatic vegetation surveys were recommended. Since 2001, aquatic vegetation has been found in trace amounts.

The current fisheries survey was conducted on June 1 and 2, 2004 to monitor sport fish growth. Fish collection effort consisted of 0.5 hour of pulsed D.C. night electrofishing, four gill net lifts, and two trap net lifts. Two individuals collected fish stunned by the electrofisher. Dissolved oxygen and water temperature profiles, pH, total alkalinity, conductivity, and turbidity data were collected as per standard lake survey guidelines. The aquatic vegetation survey was conducted on August 4.

RESULTS AND DISCUSSION

Water chemistry data were standard for a lake in southwest Indiana. Oxygen was sufficient for fish survival to a depth of 14 feet. Trace amounts of American pondweed, creeping water primrose, spike rush, common duckweed, and Eurasian watermilfoil were found during the aquatic vegetation survey.

A total of 419 fish representing eight species was sampled that weighed 130.65 pounds. Bluegill ranked first by number followed by largemouth bass, redear sunfish, and channel catfish. Largemouth bass ranked first by weight followed by channel catfish, bluegill, and redear sunfish. Warmouth, yellow bullhead, blackstripe topminnow, and black bullhead were the remaining species sampled. No black crappie were sampled, but they have been collected in previous fisheries surveys.

A total of 208 bluegill was sampled that weighed 14.14 pounds. They ranged in length from 1.3 to 8.8 inches. Bluegill accounted for 50% of the collection by number and 11% by weight. Relative abundance in 2001 was 68% by number and 23% by weight. The bluegill electrofishing catch rate was 336 per hour. Electrofishing catch rates in 1997 and 2001 were 472 and 660 per hour. The trap net and gill net catch rates were 15 and 3 per lift. Bluegill growth was exceptional. Bluegill growth for all ages was greater than 1 standard deviation above the district's average growth. Growth for age 2 and 3 bluegill improved by a half inch, while growth for ages 4 and 5 remained the same compared to 2001 results. An age 5 bluegill averaged 8.3 inches. The bluegill fishing potential (BGFP) index classified this lake as having "good" bluegill fishing with an index rating of 24 (Ball and Tousignant 1996). Previous index values were 21 (1997) and 34 (2001).

The bluegill proportional stock density index (PSD) was 23 which was similar to previous results (Anderson and Neumann, 1996). This value is in the recommended range (20-60) for a

balanced fishery. The relative stock density index value for bluegill at least 7 inches long (RSD7) decreased from 25 (2001) to 19. The RSD8 index value also decreased from 8 to 6. These RSD index values indicate that a good proportion of the bluegill population is of a harvestable size.

A total of 155 largemouth bass was sampled that weighed 79.42 pounds. They accounted for 37% of the sample by number and 61% by weight. Bass relative abundance in 2001 was 16% by number and 43% by weight. Largemouth bass ranged in length from 6.3 to 16.9 inches. The electrofishing catch rate increased from 210 (2001) to 292 per hour. Bass growth decreased by approximately a half inch for ages 2 through 4, but are still in the high end of the average range when compared to the district average.

Largemouth bass PSD and RSD14 indices both decreased from 2001 levels. The PSD index value decreased from 33 to 20 and the RSD14 declined from 11 to 4. These decreases indicate that the bass population is starting to shift towards smaller bass.

Twenty-two redear sunfish were sampled that weighed 8.49 pounds. They ranged in length from 1.8 to 9.6 inches and accounted for 5% of the sample by number and 7% by weight. Redear relative abundance in 2001 was 13% by number and 24% by weight. The electrofishing and trap net catch rates were 32 per hour and 3 per lift. No redear were caught in gill nets. The electrofishing catch rate substantially decreased from 2001 (140 per hour), but was nearly identical to the 1997 catch rate. Growth was above average and has improved since 2001.

Thirteen channel catfish were sampled that ranged in length from 6.5 to 22.1 inches and weighed 25.51 pounds. They accounted for 3% of the collection by number and 20% by weight. The gill net catch rate was identical to 2001 results at 3 per lift and the electrofishing catch rate was 6 per hour.

Warmouth, yellow bullhead, blackstripe topminnow, and black bullhead comprised the remainder of the sample. Collectively they accounted for 5% of the sample by number and 2% by weight.

CONCLUSIONS AND RECOMMENDATIONS

Prides Creek Lake provides good fishing for bluegill, redear sunfish, largemouth bass, and channel catfish. Black crappie are also present in low numbers and should add to the anglers creel.

The lake's fishery is starting to show the impacts of no aquatic vegetation. Bluegill and redear sunfish densities have decreased since 2001 while bass abundance has increased. Also, the bluegill population indices and electrofishing catch rates have decreased while the bass population indices decreased and their electrofishing catch rates increased to nearly 300 per hour. The bluegill have no habitat to evade predators and this is reflected in the low number of bluegill sampled in the 3.5 to 6.5 inch range. Bass growth was still good, but has declined

since 2001. It is anticipated that bass growth will continue to slow as bluegill numbers decline until aquatic vegetation can reestablish itself.

The key to having good fishing at this lake is good aquatic vegetation management. Previous fisheries surveys have shown that when vegetation abundance reaches 60% bottom coverage, bluegill and bass growth declines. Managing the vegetation with triploid grass carp has worked to eliminate the vegetation, but not to sustain it's level at 25 to 40% bottom coverage which is needed to help provide for a balanced fishery. In the future when aquatic vegetation does become a problem again, it is strongly recommended that aquatic herbicides be used instead of triploid grass carp. The district 7 fisheries biologist can formulate an aquatic vegetation management plan that can sustain appropriate vegetation levels that will provide for better fishing if aquatic herbicides are used. The annual aquatic vegetation surveys should continue so that vegetation can be closely monitored.

The channel catfish gill net catch rate was low which indicates the stocked catfish are being harvested. Therefore, the channel catfish stockings should continue.

The lake's fishery should be resurveyed two years after aquatic vegetation abundance approaches 25% bottom coverage.

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